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November 14, 1998

Bruce Halstead
Fish and Wildlife Service
16th Street, Room 209
Arcata, CA 95521-5582

RECEIVED
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US Fish & Wildlife Service
CCFWO, Arcata, CA

Re: Permits PRT 828950 and 1157 and SYP 96-002

Dear Mr. Halstead:

We are writing on behalf of ourselves and Friends of Gilham Butte.

Please do not approve the Habitat Conservation Plan (HCP) for Pacific Lumber (PL). The HCP and the Sustained Yield Plan (SYP) draft plans, as written, are scientifically, legally, and biologically inadequate.

The HCP/SYP drafts do not adequately survey lichens, mushrooms, mycorrhizae, and other non-vascular plants. In addition, the draft plans do not adequately protect against jeopardy of rare and endemic species of non-vascular plants, especially those that dependent upon old-growth forests.

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According to McFarland and Largent (1998)

Lichens can be slow to re-colonize and have difficulty migrating uphill. Fungi, especially the mycorrhizal species, can take many years for the hyphae to re-colonize a highly disturbed area, and it could take many more years for the fungus to be able to reproduce.

The HCP/SYP drafts do not protect the old-growth hardwood component that is essential to many of the rare lichens. McFarland and Largent note

The relative frequencies of these [hardwood and conifer] components affect the distribution and abundance of their associated cryptogamic species. In general, sheltered areas, riparian areas, and large conifers intermixed with mature hardwoods appear to have a relatively more abundant and diverse species composition of cryptogamic flora. A higher diversity in the vascular plants also seems to provide a greater variety and abundance of the accessory lichens, bryophytes, and fungi. Few cryptogamic species are found in the younger, managed, even-aged stands with a single-species conifer overstory in this [KRNCA] ecoregion.

McFarland and Largent recommend careful management of the forests for conservation of the nonvascular flora. Specifically they recommend that

1. riparian areas be managed to ensure that micro-climate characteristics are maintained and the diversity of hardwood species left intact; and
2. upland stands, if harvested, aggregate retention trees in clumps, maintain older individuals in the stand, and maintain lichen-occupied hardwoods present in the stand.

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Regarding the protection of salmon and steelhead, the plan provides inadequate interim stream buffer zones that are much narrower than those recommended by the FEMAT report. The HCP/SYP plans propose logging within these inadequate buffer zones. The plan also proposes conditions in which the stream temperature rises now and then up to 18.4 Centigrade, which will be lethal to Coho salmon, which cannot tolerate temperatures over 16.5 Centigrade.

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To avoid landslides, the HCP proposes relying upon reports prepared by a PL geologist, which is an unacceptable conflict of interest for you to allow, particularly because PL has such a poor track record for responsibility in following forestry laws and regulations.

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Implementation of the HCP/SYP will result in an increase in the ambient temperature of the watercourses, adding to an already significant adverse condition with regard to water temperatures so high that they are lethal to salmon, steelhead, amphibians, and invertebrates.

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We ask that you deny the HCP/SYP until the most damaged PL watersheds recover to a point that canopy reduction will not increase the stream temperatures. An increase in the stream temperatures would cause significant long-term adverse effects to the Coho, Steelhead, and invertebrates in these watersheds.

In order to protect the Coho salmon, steelhead, and other fish in the PL Mattole watersheds, the HCP/SYP plans need to meet the ManTech standards (Spence, Lomnický, Hughes, and Novitzki, 1996. An ecosystem approach to salmonid conservation. RT 4501-96-6057. ManTech Environmental Research Services Corp., Corvallis OR (Available from the National Marine Fisheries Service, Portland, Oregon.).Part I - Technical Foundation, pg. 166).

The ManTech standards require protection of Class III watercourses. The absence of no-cut buffer zones around Class III watercourses will result in sedimentation delivery to Coho and Chinook and steelhead streams.

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The absence of no-cut buffer zones that meet the FEMAT standards for watercourses could initiate landslides in the steep headwall and inner gorge areas of watercourses. Landslides in these sensitive areas could result in debris torrents because there would be no big trees alongside the streams to stop the landslide after the big trees were logged according to the HCP/SYP plans.

The HCP/SYP proposes logging on known slide areas. Because these slide areas are in an area of high-rainfall, high seismic activity, and steep slopes, any removal of trees is too risky because of the high potential risk to property destruction to downstream property owners and for adding to the existing adverse significant cumulative impacts that exist at present and will exist in the future in PL watersheds.

Please explain how the HCP/SYP will implement the ManTech and FEMAT standards.

The HCP/SYP does not allow for resting sub-basins that are severely impaired with respect to sediment and high water temperatures. The disturbance index relies upon a ten-year time span that does not take into consideration the fact that Douglas fir stumps decay in 8-15 years after logging. Because the stumps decay, there is a loss of root strength that is essential to slope stability.

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Because of PL's in-your-face disregard of timber operation regulations, it is imperative that you disallow all winter operations on PL lands from October 15 through April 15 each year.

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Please do not approve the HCP/SYP plans to convert redwood forests to Douglas fir forests just so that PL charts can show a gain of a few percentage points in inventory growth. Although PL needs these extra percentage points to justify its accelerated harvest plans in the first two decades, there will be significant adverse environmental effects from such a conversion.

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The HCP/SYP draft plans do not adequately assess the significant cumulative effects that the conversion from redwood to Douglas fir forests will have on the numerous vascular and non-vascular species, endemic species, and rare and endangered flora and fauna species in the redwood forests that exist now on PL lands but will vanish if PL is allowed to convert the redwood forests to Douglas fir.

As you are aware, PL has been recently convicted hundreds of times of criminal violations of California forestry laws and has had its timber operator's license suspended by the California Department of Forestry. Because of PL's inability to take responsibility and follow the laws that regulate its activities in the forest, please deny PL's request for a permit to "take" endangered species.

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The SYP is incomplete, outdated, and in some cases materially misleading. Furthermore, the SYP does not have current and accurate data describing the condition of watersheds on PL's ownership.

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The SYP is a plan for short-term liquidation of forest resources at a huge long-term environmental and economic cost. The SYP proposes the harvest of 32% more forest than will grow back over the first decade. Thirty-five thousand (35,000) acres are proposed for clearcutting, including 2,500 acres of uncut old-growth forests. An additional 19,382 acres will be logged in the first decade, bringing the total acreage to 54,382 acres, which is over 25% of Pacific Lumber's land. This proposal is not a plan that will meet the requirements of CCR 1091.1(b) which requires "sustained production of high-quality timber products...while giving consideration to environmental and economic values."

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The marbled murrelet, which nests on top of the dense moss on the upper branches of mature conifers, needs large old-growth trees for habitat. The permanent destruction of ancient and residual forest habitat, which the marbled murrelet relies upon for its survival and recovery, cannot be mitigated. Hundreds of murrelets will be killed if you allow Pacific Lumber to liquidate over 17,000 acres of ancient and residual forest habitat. Incredibly, the plan allows for logging during the murrelet breeding season.

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The HCP/SYP drafts are illegal because they do not conform to provisions of the Migratory Bird Treaty Act.

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The HCP/SYP plans provide inadequate protection for the long-term persistence of the northern spotted owl. The draft plans do not adequately provide for juvenile dispersal of the northern spotted owl. Because long-term persistence of the species depends upon survival of clusters of northern spotted owl adults and upon survival and successful dispersal of juveniles, as documented in research by Gutierrez and Lamberson, the HCP/SYP will result in jeopardy of the species.

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The Lamberson model (1994) indicates that 15 pairs are the minimum necessary for long-term survival of the northern spotted owl cluster:

...our results suggest that a reserve design that provides only for individual pairs or small clusters of pairs has a low likelihood of

sustaining the species. In fact, even relatively large clusters for spotted owls have uncertain fates if they currently hold far less suitable habitat than their eventual carrying capacity. ... large gains [in mean occupancy] occurred in moving from clusters of 5 [female northern spotted owls] to clusters of 20 sites; much smaller gains were made in moving from 20 to 45 sites per cluster.

The reason for having a high percentage of suitable habitat within a cluster is to enhance the success of juvenile dispersal:

The probabilities of finding a suitable site, or an individual of the opposite sex, became insurmountable when suitable habitat was less than about 15% of the landscape, or the population density was too low. ... In general, large clusters become very stable if the proportion of suitable sites within the cluster lies above the threshold value derived in Lamberson et al. (1992).

The 1992 Lamberson et al. study had two major conclusions:

First, in a fixed landscape, the model predicts a sharp threshold below which Spotted Owl viability plunges. The underlying cause is dispersal failure (the recolonization rate of pair-sites is less than their extinction rate), due to a scarcity of suitable habitat or a scarcity of available mates in suitable habitat.

Second, ... **the crowding of older owls into remaining suitable habitat as timber harvest continues is likely to produce very high occupancy rates** -- much higher than would be expected under long-term stable conditions. As a result, we should be very careful in using occupancy data to predict long-term abundance, since the equilibrium occupancy levels predicted by the model are well below those seen while logging of suitable owl habitat is continuing. In fact, if we extend the harvest for the case shown in Figure 8 just nine more years (leaving everything else as before), **the simulation leads to extinction in approximately 250 years. In this case, the occupancy levels during habitat loss are virtually unchanged, but the population crashes long after timber harvest has ceased.** Also, the juvenile survival rate is substantially depressed during the logging phase. This may explain the very low juvenile survival rates that have been estimated from current field data.

Lamberson et al. (1992) soberly finish:

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The ultimate conclusion that can be drawn from this work is that we should proceed very cautiously with any management decisions. There are likely to be some very sharp population thresholds which, once passed, can lead to a disaster for the spotted owl population.

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Please note the following:

- The northern spotted owl population is declining at the rate of 7% per year (Burnham, 1994)
- Long-term persistence of northern spotted owl populations require clusters of owl territories that are at least 20 territories in size; 40 or more is optimal (Lamberson, 1994)
- The HCP/SYP drafts focus on providing minimum habitat for existing individual owls; the drafts do not address the connectivity between owl territories that is necessary for the creation of clusters that juveniles need for successful dispersal
- Northern spotted owls are long-lived; known northern spotted owls might belong to a graying population because of failed juvenile dispersal
- The magnitude and importance of dispersal among northern spotted owl populations is poorly known throughout the owl's range.
- Juvenile dispersal failure due to a scarcity of suitable habitat or a scarcity of available mates in suitable habitat creates a sharp threshold below which spotted owl viability plunges. (Lamberson, 1992)
- The crowding of older owls into remaining suitable habitat as timber harvest continues is likely to produce very high occupancy rates, but will result in extinction of the population in approximately 250 years, long after timber harvest has ceased. (Lamberson, 1992)
- Less than 7% of the old growth forest that was present in 1947 exists today in the Mattole watershed, which is on the west side of Gilham Butte. With the clearcut of PL old-growth Douglas fir forests in the Mattole watershed, this old-growth forest component will be drastically reduced, thus significantly and adversely affecting the long term persistence of the northern spotted owl population on the north coast.
- The home territory of a pair of northern spotted owls is 800 hectares (1976 acres) or more (Gutierrez and Harrison, 1996)
- The HCP/SYP will "disrupt, impair or modify foraging habitat, roosting structure, nesting structure, roosting behavior, and nesting behavior" of northern spotted owls.
- The northern [spotted] owl is becoming increasingly more subdivided because of the coarse-grained fragmentation of Pacific Northwest forests.
- Populations of territorial animals will collapse when the proportion of the landscape that is suitable habitat falls below a critical threshold. For the northern spotted owl, Lande (1988) estimated that this threshold might lie near 20 percent.

Extensive research has shown the fallacy of the notion that northern spotted owls are numerous and protected. Counts of northern spotted owls show a graying population with inadequate habitat for successful juvenile dispersal.

Demographic analyses indicate that northern spotted owl populations have a rangewide decline of 7 percent per year (Anderson and Burnham 1992; Burnham et al. 1994). Gutierrez and Harrison (1996) state that there "are currently more than 8000 known owls" in the northern spotted owl range from Alaska to northern California.

Gutierrez and Harrison (1996) state

Spotted owl population dynamics and population viability can be understood properly only with a metapopulation approach. The older approach to viability analysis was to identify a target size for the total population by using nonspatial models that emphasize environmental stochasticity. **This simply does not work for long-lived territorial species, distributed over large areas at low densities, in habitats that may be naturally (or anthropogenically) patchy at multiple spatial scales.** [p. 179]

Gutierrez and Harrison (1996) define "metapopulations" as

sets of subdivided populations in which rates of mating competition, and other interactions are much higher within than among populations. .. More narrowly defined, metapopulations are subdivided populations with demographically significant exchange among them, meaning that migration or dispersal among populations leads to the stabilization of local population fluctuations, the prevention of local extinctions (the "rescue effect"), the colonization of new habitats or habitats made vacant by local extinctions, or all three. When a species shows metapopulation structure in this sense, the important implication is that viability is highly sensitive to landscape structure (that is, the distribution of habitat in space and time). **If humans alter the landscape such that patches of habitat are too few or too far from one another, individual populations or even the whole metapopulation may go extinct.** [p. 168] (emphasis added)

They further point out that

In the original and perhaps narrowest sense, metapopulations are subdivided systems in which the turnover of local populations is frequent; these could be called extinction and colonization

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metapopulations. ... **For organisms such as owls, which are long-lived, even with intensive monitoring relatively few local extinctions or colonizations will be observed directly.** Thus the frequency and pattern of local extinctions are subjects for modeling and guesswork. [p. 169] (emphasis added)

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They continue

The other related concept is source/sink dynamics, referring to species that occupy both high-quality habitats (sources) where populations grow and produce emigrants, and low-quality habitats (sinks) where populations cannot sustain themselves in the absence of immigration. ... the term "sink" may be used to denote habitats detrimental to the viability of populations. For example, the model of Lamberson et al. (1992) showed that **the logged matrix surrounding forested reserves for spotted owls may reduce the owls' population growth rate if naive juveniles attempt to establish territories in this matrix rather than searching for better quality habitat.** [p. 170] (emphasis added)

Gutierrez and Harrison point out

Quantitative modeling of spotted owl metapopulations began with Lande (1987, 1988), whose models illustrated that **populations of territorial animals will collapse when the proportion of the landscape that is suitable habitat falls below a critical threshold. For the owl, Lande (1988) estimated that this threshold might lie near 20 percent,** which happens to be the proportion of the northern spotted owl's range that is currently old-growth forest. (p. 177) (emphasis added)

In the above paragraph, Gutierrez and Harrison were referring to the Pacific Northwest in their estimates of 20 percent old-growth forest. In 1988 the amount of late seral forest in the 194,560 acre-Mattole watershed was less than 7%. The stands of late seral forest in the Mattole watershed are widely scattered with several miles between them: Gilham Butte, Bear Creek, lower North Fork Mattole, Honeydew Creek, Squaw Creek, Sanctuary Forest, and Mill Creek. Most of these stands are in the PL ownership. Because the late seral stands are widely scattered, mortality risk increases for northern spotted owl juveniles when they disperse.

The decline of Northern Spotted Owl populations can be reversed by growing sub-optimal areas that are adjacent to a core of late seral forest into suitable habitat with dense canopy and large downed trees.

Gutierrez and Harrison (1996) state

Spotted owls form long-term pair bonds and **occupy very large home ranges, usually greater than 800 ha; they are long-lived and have high annual adult survival rates (0.8-0.95) and low reproductive rates (about one fledgling per year,** with variable annual nesting frequencies). [p. 174]

... spotted owls within continuous areas of forest can be described as forming "spatially structured populations" as defined earlier. In other words, population densities are extremely low, each individual interacts only with a few neighboring individuals, and the likelihood of recruiting to the breeding population may be limited by the large distances between potential territory sites. **...the northern [spotted] owl is becoming increasingly more subdivided because of the coarse-grained fragmentation of Pacific Northwest forests.** Both the direct evidence (leg banding) and the indirect (genetic) evidence of juvenile dispersal are sparse and inconsistent, however, leaving the magnitude and importance of **dispersal among populations poorly known throughout the owl's range. This constitutes the major gap in our understanding** of the owl's metapopulation structure, as well as in our ability to prescribe management strategies. [p. 175]

Noon and McKelvey [1996] integrate the individual and metapopulation models and show the trade-offs between small reserves (10 females) versus large reserves (40 females):

The results clearly demonstrate the reserve design trade-offs and provide insight into the appropriate paradigm (local or metapopulation dynamics) for management. ... Thus, **the management focus for a few large reserves is the maintenance of local habitat quality.** In contrast, small reserves are seldom locally stable, and colonization among reserves is important even when most of the habitat within a reserve is suitable. Thus, **the management focus for many small reserves is to maintain metapopulation connectivity** by facilitating colonization. **Importantly, no reserve structure —regardless of size or spacing—is viable if fewer than 30 percent of the sites within the reserve are suitable habitat.** (p. 157) [emphasis added]

California Practice Rules require a 500-ft buffer around a northern spotted owl nest. In this buffer zone, timber operations cannot occur during the breeding season. However, timber operations can occur in the 500-ft buffer at other times. This buffer is approximately 18 acres. The Rules also provide for 500 acres of owl habitat within 0.7 miles of the nest, which amounts to about 50% of the area within that radius. The other half can be clearcut and frequently is

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clearcut. This 500 acres of owl habitat is a fraction of the 800 hectares (1976 acres) that constitutes a northern spotted owl home territory according to Gutierrez and Harrison (1996). "Owl habitat" does not mean old growth coniferous forest. It can, and often does, include young growth hardwood forests.

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Reduction or fragmentation of suitable northern spotted owl habitat on PL's ownership will likely be detrimental to long-term persistence of the northern spotted owl clusters that extend from PL ownership to Humboldt Redwoods State Park through Gilham Butte to the King Range National Conservation Area.

The HCP/SYP includes 36 protected and rare species in its "incidental take" permit. As you are aware, because of the "no surprises" clause, PL will not have to provide any additional protection for these species for the next 50 years. This situation is intolerable because it locks into place a refusal to adopt management practices based on new scientific findings that will occur in the next 50 years.

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What kind of world do we live in that you could blindfold and handcuff future generations to outdated scientific understandings? You wouldn't really allow such a precedent to take place, would you?

We are long-time residents of Humboldt County. We are dismayed at the prospect that PL wants to so dramatically, irreversibly, and adversely impact the forest environment of Humboldt County. For all the reasons that we have presented above, please do not approve PL's HCP/SYP.

Sincerely,



Linda Derksen and Jan Derksen, Ph.D.

Cc: John Munn, Calif. Dept of Forestry
1416 Ninth Street, Sacramento CA 95814 (fax 916-653-8957)

References

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